

**UNITED STATES DISTRICT COURT  
DISTRICT OF MINNESOTA**

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In Re: Bair Hugger Forced Air Warming  
Products Liability Litigation

MDL No. 2666 (JNE/FLN)

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This Document Relates to  
**ALL ACTIONS**

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**DEFENDANTS' MEMORANDUM IN OPPOSITION TO PLAINTIFFS' MOTION  
TO EXCLUDE THE OPINIONS AND TESTIMONY OF JIM HO, PH.D.**

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## INTRODUCTION

In this MDL, nearly 4,000 claimants allege that the Bair Hugger patient warming system caused them to develop bacterial infections, but none of Plaintiffs' expert witnesses has any expertise in the study of airborne bacteria. This is consistent with Plaintiffs' pattern of avoiding bacteria at every turn: while bacteria play an obvious and central role in this case, none of their experts looked for bacteria within Bair Hugger warming units or in the air they emit, and none of the studies on which they rely shows an increase in airborne bacteria during Bair Hugger operation. Instead, Plaintiffs and their experts rely on "particles" as a proxy for bacteria. 3M retained Dr. Jim Ho, a Ph.D. microbiologist and leading authority in the detection of biological aerosols, to explain basic concepts of aerobiology and apply them to the facts of this case. Among other things, Dr. Ho will demonstrate that particle counts are not a reliable predictor of airborne bacteria levels.

Dr. Ho, who has been retained by the United States and Canadian governments for their most sensitive aerobiological investigations, may be more qualified than anyone else in the world to address issues of airborne bacteria. He applied his unique training and experience to review the relevant literature, and critique Plaintiffs' experts' reports, and rebut Plaintiffs' allegations. *Aviva Sports, Inc. v. Fingerhut Direct Marketing, Inc.*, 829 F. Supp. 2d 802, 835 (D. Minn. 2011) (role of rebuttal expert is "to critique plaintiffs' expert's methodologies and point out potential flaws in the plaintiff's experts' reports."). His rebuttal opinions and testimony are relevant and reliable under *Daubert* and Rule 702, and they meet *Goeb v. Tharaldson*'s requirements for general acceptance and foundational

reliability. Plaintiffs' motion to exclude Dr. Ho's opinions and testimony must therefore be denied.

## FACTS

Dr. Ho has spent three decades inventing and refining techniques for isolating bacteria-carrying particles from undifferentiated airborne dust. When he began his career, "there wasn't a lot of technology available that you could either buy off the shelf or adopt" for detecting biologically active particles; therefore, he had to develop the technology himself. Deposition of Jim Ho, Ph.D. ("Ho Dep.") (DX1) at 10:19–11:16.<sup>1</sup> Dr. Ho's years of research and development culminated in a device called the Flourescence Aerodynamic Particle Sizer, or "FLAPS." Traditional optical particle counters, such as the one used by Plaintiffs' expert Michael Buck in his particle-counting experiment,<sup>2</sup> are only capable of distinguishing particles by size. FLAPS does more: it identifies particles that are actually carrying colony-forming units (CFUs) of live bacteria. *See* Expert Report of Jim Ho, Ph.D. ("Ho Rpt.") (DX2) at 2. FLAPS technology has been put to the test in bioaerosol detection competitions at the U.S. Army's Dugway Proving Ground,<sup>3</sup> where Dr. Ho's teams have won first place in several field trials. *See id.* at 2.

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<sup>1</sup> All Exhibits are attached to the Declaration of Peter J. Goss filed concurrently.

<sup>2</sup> Dr. Buck's experiment and its limitations are discussed in Defendants' motion to exclude Plaintiffs' engineering experts, ECF No. 805 at 34–40.

<sup>3</sup> The Dugway Proving Ground, established at Dugway, Utah in 1942, is the U.S. military's primary research center for countering biological weapons. *See* <http://www.dugway.army.mil/History.aspx> (last visited September 20, 2017).

While much of Dr. Ho's work has focused on military applications, he has conducted several high-profile aerobiological investigations. The CDC flew him from his home in Medicine Hat, Alberta, Canada to Washington to investigate the "anthrax letters" at the Brentwood Postal Station in November 2001. *Id.* at Exhibit A, pp. 2-3. Using his equipment, Dr. Ho and his team detected airborne anthrax particles around the mail sorting machines.<sup>4</sup> Two years later, Canada called on Dr. Ho to investigate a SARS outbreak at Sunnybrook Hospital in Toronto, one of the first major sites of the 2003 global SARS pandemic. *See* Ho Rpt. (DX2) at Exhibit A, pp. 2-3; *see also* Ho Dep. (DX1) at 18:3-14. The U.S. and Canadian governments clearly consider Dr. Ho uniquely qualified to detect airborne bacteria when lives are at stake.

As noted, Plaintiffs have pinned their hopes of proving general causation on an A-to-B-to-C argument: the Bair Hugger system reportedly increases particle counts; bacteria are sometimes attached to particles; therefore, the Bair Hugger is capable of delivering bacteria-carrying particles to a patient's surgical wound. Dr. Ho's role in this case is to elucidate the lack of scientific support for Plaintiffs' syllogism. He describes his work to date as follows:

Q. What exactly did you do in this case?

A. The . . . I provided a lot of insight into what biological agents are. In this particular example the controversy was -- was on biological aerosol particles. And I noted that there was a great deal of misconception about what biological particles are, what the characteristics are. And so I provided what I had learned

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<sup>4</sup> *See* Dull P. et al., "Bacillus anthracis Aerosolization Associated with a Contaminated Mail Sorting Machine" 8 *Emerging Infectious Diseases* 1044 (2002) (DX3).

over my career to impress upon whoever is interested in what biological particles really are and how they behave.

Ho Dep. (DX1) at 14:22–15:6. In sum, Dr. Ho’s objective at trial will be to help the jury understand “what biological particles really are and how they behave,” and to debunk Plaintiffs’ unscientific contention that “particles = bacteria = infections.”

## **ARGUMENT**

Plaintiffs’ single-minded focus on particles reflects the fact that their experts have counted particles but no CFUs emanating from the Bair Hugger. As Einstein once said, however, “Many of the things you can count, don’t count. Many of the things you can’t count really count.”<sup>5</sup> In this case, airborne bacteria—which Dr. Augustine couldn’t count, and Plaintiffs didn’t try to count—are what really count. Because particles are all Plaintiffs have, they must persuade the Court that particles can accurately predict levels of airborne bacteria. But as Defendants have already shown in their motion to exclude Plaintiffs’ engineering experts, the scientific literature does not bear this out. *See* ECF No. 805 at 37–40. Thus, Plaintiffs’ primary criticism of Dr. Ho (that he “has no reliable basis to conclude with reasonable scientific probability that particles cannot act as a representational surrogate for bioburden”) must fail. The remainder of Plaintiffs’ arguments regarding Dr. Ho’s qualifications and his alleged “biased advocacy” are equally unpersuasive and should be disregarded.

Dr. Ho’s opinions and testimony are relevant and reliable under *Daubert* and Rule 702 because they are based on his independent review of the literature and his unparalleled

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<sup>5</sup> <http://www.azquotes.com/quote/472899> (last visited September 22, 2017).

expertise in matters of airborne bacteria. His critique of Plaintiffs' cherry-picked articles is on point; given that he has been tasked with proving a negative—that airborne particles do *not* reliably correlate with airborne bacteria—“pointing to the absence of convincing studies or the weaknesses of studies on which Plaintiffs rely . . . is in these circumstances a logical and valid approach.” *In re Mirena IUD Products Liability Litigation*, 169 F. Supp. 3d 396, 418–19 (S.D.N.Y. 2016) (citing *McCullock v. H.B. Fuller Co.*, 61 F.3d 1038, 1042–43 (2d Cir. 1995)). Prof. Ho’s deconstruction of Plaintiffs’ “particles = bacteria = infections” formulation is scientifically sound and generally accepted. Plaintiffs’ motion to exclude should be denied.

## **I. PLAINTIFFS MISREPRESENT THE LITERATURE ON PARTICLES AND BACTERIA.**

Plaintiffs’ attack on Dr. Ho’s primary opinion—that particle counts do not predict bacteria—relies on a handful of articles that are flawed, biased, or irrelevant. Meanwhile, Plaintiffs neglect to advise the Court of key articles that refute their “particles = bacteria = infections” formulation—notably Landrin (2005), Cristina (2012), and Birgand (2015), all of which found no reliable correlation among airborne particles, CFUs, and surgical infections. Plaintiffs’ claim that a “consensus of data” supports such a correlation is simply false; in fact, according to a 2016 review, *only two articles* claim a correlation between particles and CFUs.<sup>6</sup> It is Plaintiffs who are in the minority here. As a result, their challenge to Dr. Ho’s opinion that particles are a poor surrogate for bacteria is unavailing.

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<sup>6</sup> See Mora M. et al., “Microorganisms in Confined Habitats: Microbial Monitoring and Control of Intensive Care Units, Operating Rooms, Cleanrooms and the International Space Station” 7 *Frontiers in Microbiology* 1, 6 (2016) (DX4).

At Dr. Ho's deposition, Plaintiffs' counsel confronted him with the 2010 Stocks study, in which the authors claim to have found a correlation between CFUs and levels of particles greater than 10 $\mu$ m in size.<sup>7</sup> Stocks is one of the two articles cited in the 2016 review as supporting such a correlation. *See* Mora (2016) (DX4) at 6. Where Dr. Stocks saw a correlation, however, Dr. Ho found "scattered data all over the map." Ho Dep. (DX1) at 173:24–174:21. A glance at Fig. 1 of the Stocks article confirms Dr. Ho's impression—there are widely scattered dots that bear little relation to the lines drawn through them. *See* Stocks (2010) (ECF No. 735-3) at 202. Indeed, the authors themselves disclose that "[t]he precision of predicting CFU/m<sup>3</sup> counts from particulate count was limited." *Id.* On this basis, Dr. Ho disagrees with the suggestion that "Stocks and his colleagues were able to demonstrate that particles are a reasonable surrogate for bioburden." Ho Dep. (DX1) at 173:1–14.

Plaintiffs counter Dr. Ho's disapproval of the Stocks paper with an email from Russell Olmsted, an infectious disease epidemiologist and former consultant to Arizant, calling the paper "fairly remarkable." Pl. Ex. 4 (ECF No. 735-4). But Mr. Olmsted's superficial endorsement of the Stocks study carries little weight because he lacks Dr. Ho's

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<sup>7</sup> *See* Stocks G. et al., "Predicting bacterial populations based on airborne particulates: A study performed in nonlaminar flow operating rooms during joint arthroplasty surgery" 38 Am. J. of Infection Control 199 (2010), Pl. Ex. 3 (ECF No. 735-3).

expertise in aerobiology.<sup>8</sup> Moreover, there is no indication from Mr. Olmstead's cursory email that he reviewed the Stocks data as closely as Dr. Ho did.

Plaintiffs likewise oversell the significance of the 2017 article by Darouiche and colleagues. First, they only quote half of the results: they cite the findings from the control group that "CFU density was positively related to total particulate density," but they omit the very next sentence, "*No association between particle density and CFU could be demonstrated in the intervention group . . .*"<sup>9</sup> Because the correlation was only found in the control group, this casts doubt on the authors' suggestion that "airborne particle counts may be used as a proxy for ambient CFU density."

In addition, unlike Dr. Stocks, Dr. Darouiche did not break down his results by particle size. In his paper, Stocks observed that "[s]maller particles are present in much higher numbers than larger ones, so monitoring particles without discriminating for size ranges obscures identification of the larger particles that may be carrying microbes." Stocks (2010) (ECF No. 735-3) at 203. Thus, Stocks analyzed the particle data by size ranges, and reported a correlation for particles 10 $\mu$ m or greater—albeit with "limited" predictability, as noted. Darouiche, by contrast, *grouped all of his particle data together.* See Darouiche (2017) (ECF No. 735-5) at 7 Table 2 (displaying "total particulate" counts

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<sup>8</sup> Dr. Olmsted is an epidemiologist with a Masters in Public Health; he does not claim to be a microbiologist. See Dr. Olmsted's bio at <https://blogs.cdc.gov/safehealthcare/authors/russell-n-olmsted-mpm-cic/> (last visited September 21, 2017).

<sup>9</sup> Darouiche R. et al., "Association of Airborne Microorganisms in the Operating Room With Implant Infections: A Randomized Controlled Trial" 38 *Infection Control & Hospital Epidemiology* 3, 6 (2017), Pl. Ex. 5 (ECF No. 735-5).

vs. CFUs). Thus, Darouiche's total particle count would have included thousands, if not tens of thousands, of  $.3\mu\text{m}$  and  $.5\mu\text{m}$  particles that are too small to be bacteria. *See id.* (“Bacteria are generally  $\geq 1\mu\text{m}$  in size and have a tendency to cluster together and attach to other larger particles.”).

Darouiche's inclusion of tens of thousands of irrelevant particles casts extreme doubt on any correlation he claims to have found between total particle counts and CFUs. As Dr. Ho explains, Darouiche's attempt to correlate hundreds of thousands of particles with single-digit CFUs produces a wide confidence interval around his results. Ho Dep. (DX1) at 215:11–216:20. According to the Reference Manual on Scientific Evidence, a 95% confidence interval reflects the range of results that would be expected 95% of the time if the experiment were repeated multiple times. *See* Michael D. Green & D. Michal Freedman, “Reference Guide on Epidemiology,” in *Reference Manual on Scientific Evidence* 549, 580 (Federal Judicial Center, 3d ed. 2011). The narrower the confidence interval, the more statistically stable the results; the wider the confidence interval, the greater the likelihood that there is no true association. *See id.* Dr. Ho notes that the confidence interval around Darouiche's purported correlation is “the size of a mile.” Ho Dep. (DX1) at 215:11–216:20. He explains that Darouiche ignored the significant noise in his data, and misleadingly presents a straight-line correlation where none exists. *Id.* at 218:1–220:8.

Plaintiffs also ignore the financial bias underlying the Stocks and Darouiche articles. Both articles owe their existence to the “Air Barrier System” (ABS), a device manufactured by Nimbic Systems, whose founder and President, Sean Self, co-authored the Stocks paper.

The ABS is marketed to “reduce the presence of airborne contaminants at incision sites” by using “a high-purity filter and an air emitter that is placed near incisions throughout the duration of surgery.”<sup>10</sup> Potential buyers of the ABS will naturally want to see that its ability to reduce airborne particles translates to fewer colony-forming units and decreased infection risk, and that is exactly what the Stocks and Darouiche articles sought to accomplish.

Dr. Stocks has publicly endorsed the ABS system. In a YouTube video, he boasts that the ABS “aggressively reduces the particles count and presence of microorganisms by over 84 percent.”<sup>11</sup> The Darouiche article was the next phase, after Stocks’s paper, of Nimbic’s push to gain market acceptance for the ABS. Nimbic touts the paper on its Facebook page as a “Groundbreaking Clinical Trial, Demonstrating a Reduction in Costly Implant Infections.”<sup>12</sup> Under the circumstances, Dr. Ho was right to suspect that the Stocks and Darouiche papers were driven by an agenda.

With respect to the Raval paper, Plaintiffs’ counsel did not want to hear Dr. Ho’s critique:

- Q. Okay. These -- these authors here, I take it you also say that they don’t know what they’re doing either; right?
- A. Well, are you coming back to the data or not? Because you – you’re trying to --

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<sup>10</sup> <http://www.nimbicsystems.com/patients/> (last visited September 22, 2017).

<sup>11</sup> <https://www.youtube.com/watch?v=J68OwHoCYuY> (last visited September 22, 2017) at 4:18. A transcript of the video is attached as DX5.

<sup>12</sup> <https://www.facebook.com/nimbicsystems/posts/1913226842239424> (last visited September 22, 2017).

Q. No. I'm just asking you do you -- do you -- what do you feel?  
Do you criticise [*sic*] this paper or not?

A. I'm upset --

Q. We have to take it one step at a time.

A. I'm upset by the fact that you highlighted one correlated statement and then -- and then you are jumping away from it and not wanting to know anything else about it.

\* \* \*

Q. So this is -- so this is another peer-reviewed paper that disagrees with you that you say is a terrible paper?

A. Are you not interested in knowing why it's terrible?

Q. No, I'm actually really not.

Ho Dep. (DX1) at 198:1–199:14. Had Counsel been willing to engage Dr. Ho, he would have learned just how weak Raval's purported correlation really is. As with the Stocks and Darouiche papers, the data are broadly scattered.<sup>13</sup> Nevertheless, Raval and his co-authors rely on their results to set an “action level” of 32,000 particles per cubic foot of air.<sup>14</sup> This “action level” would cause the authors to shut down their cell-processing room out of concern for bacterial contamination. But the authors disclosed that their “action level” has a false-alarm rate of 50%, which “means that for half of the time that we reached the action limit for non-viable particles, no contaminant would be present.”<sup>15</sup> A 50% error rate may

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<sup>13</sup> See Raval J. et al., “Real-time monitoring of non-viable airborne particles correlates with airborne colonies and represents an acceptable surrogate for daily assessment of cell-processing cleanroom performance” 14 *Cryotherapy* 1144 (2012), Pl. Ex. 6 (ECF No. 735-6) at 11 Fig. 3.

<sup>14</sup> *Id.* at 2.

<sup>15</sup> *Id.* at 4.

be acceptable for a precautionary “action level,” but it doesn’t establish a reliable correlation between particles and bacteria.

Finally, Plaintiffs cite a study conducted in a “laying-hen chamber” at Iowa State University.<sup>16</sup> The obvious difference in the “environment of use” makes this study irrelevant—one would hope that the “particulate matter” found in a chicken coop would not appear in an operating room. By contrast, the Landrin study—which Plaintiffs call “tepid and dubious”—was conducted in four operating rooms.<sup>17</sup> The authors found that “[m]any high values of particle counts were not associated with an increase in air microbial counts.”<sup>18</sup> And Landrin is not alone: Cristina and Birgand also published studies of particle counts and microbiological samples in operating rooms. Cristina found no correlation at all between particle counts and airborne bacteria;<sup>19</sup> Birgand’s results suggested a correlation, but showed *no association* between particle counts or CFUs and wound contamination.<sup>20</sup> In light of these articles, Plaintiffs are disingenuous to argue that

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<sup>16</sup> Zheng W. et al., “Concentrations and Size Distributions of Airborne Particulate Matter and Bacteria in an Experimental Aviary Laying-Hen Chamber” 56 *Transactions of the ASABE* 1493 (2013), Pl. Ex. 7 (ECF No. 735-7).

<sup>17</sup> See Landrin A. et al., “Monitoring air sampling in operating theatres: can particle counting replace microbiological sampling?” 61 *J. of Hosp. Infection* 27 (2005) (ECF No. 810-2 at 121).

<sup>18</sup> *Id.* at 29.

<sup>19</sup> Cristina M., et al., “Can Particulate Air Sampling Predict microbial Load in Operating Theatres for Arthroplasty?” 7 *PLOSone* e52809 (2012) (ECF No. 810-2 at 132) (“The results did not reveal any statistically significant correlation between microbial loads and particle counts for either of the particle diameters considered ( $\geq 0.5 \mu\text{m}$  and  $\geq 5 \mu\text{m}$ ).”).

<sup>20</sup> Birgand G., et al., “Air contamination for predicting wound contamination in clean

“Landrin was an aberrant study” and that “the great weight of published authority” is against Dr. Ho.

In sum, Dr. Ho’s opinion that particles do not predict bacteria is not an outlier. Even Mark Albrecht, on whose “crud and bug” studies Plaintiffs rely, does not believe a correlation exists:

Q. Okay. So did it surprise you that, you know, with -- with -- with operating rooms 1 and 3 having tens of thousands of particles being emitted, you couldn’t culture out any bugs?

MR. B. GORDON: Objection to form, conflating particles and bugs again, but...

THE WITNESS: So to answer that, a large amount of the particles are going to be atmospheric dust that come in and so the -- it is not exactly surprising, because atmospheric dust is not bacteria always, it’s not, it’s just particles that are in the air.

BY MR. C. GORDON:

Q. And -- and to Mr. Ben Gordon’s objection, particles don’t correlate to bacteria, correct?

A. Correct.

Deposition of Mark Albrecht (“Albrecht Dep.”) (DX6) at 66:3–19.

Notwithstanding Plaintiffs’ selective and misleading interpretation of the literature on particles and bacteria, Dr. Ho’s opinion falls solidly within the mainstream. Plaintiffs’ motion to exclude Dr. Ho should therefore be denied.

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surgery: A large multicenter study” 43 *Am. J. of Infection Control* 516 (2015) (ECF No. 810-2 at 139) (“Air contamination was not significantly associated with wound contamination.”).

**II. PLAINTIFFS’ ATTACK ON DR. HO’S FILTRATION OPINIONS MISUNDERSTANDS HIS EXPERTISE AND HIS ROLE IN THIS CASE.**

As an expert in detecting and controlling airborne bacteria, Dr. Ho is well qualified to review and comment on the literature assessing the effectiveness of MERV 14 filtration. Dr. Ho cites Kowalski’s finding that a MERV 14 filter will remove 97% of *Staph. aureus* and 99% of *Enterococcus*, and on that basis he agrees with Kowalski that HEPA filtration is “overkill” for controlling bacteria. Ho Rpt. (DX1) at 16. Based on this evidence, Dr. Ho opines that MERV 14 filtration is appropriate to control bacterial ingress in Bair Hugger units. *Id.* Multiple test reports confirm that Bair Hugger filters meet the MERV 14 standard for filter efficiency. *See* DX44 to Defendants’ motion to exclude Plaintiffs’ engineering experts, ECF No. 810-1 at 264–69. Plaintiffs’ experts conducted no efficiency tests of their own and have no basis to dispute those results.

While Dr. Ho opines that a MERV 14 filter effectively controls bacteria, Plaintiffs rightly observe that he stops short of commenting on matters of patient safety. He is not a physician or a biomedical engineer, and he offers his filter opinions solely “from the standpoint of an aerobiology technical person.” Ho Dep. (DX1) at 74:6–18. The patient safety implications of MERV 14 filtration are for other witnesses who have the necessary expertise in medicine, operating room HVAC systems, and medical device design.

**III. PLAINTIFFS’ ACCUSATIONS OF “BIASED ADVOCACY” HAVE NOTHING TO DO WITH THE MERITS OF DR. HO’S OPINIONS.**

Dr. Ho readily agrees that his role in this case is to provide an independent, objective analysis, and not to be an advocate for the Defendants. *Id.* at 8:18–24. The testimony Plaintiffs cite as “naked advocacy” has nothing to do with the merits of Dr. Ho’s opinions,

and mostly reflects his lack of understanding of American-style cross-examination. Plaintiffs' only remotely substantive point is their argument that he was "biased" in noting Mark Albrecht's failure to use a control group, without making the same criticism of Huang et al. Pl. Mem. at 15–17. But Dr. Ho was not "biased" for questioning Mark Albrecht's microbiology capabilities, because Albrecht's former employer Scott Augustine agrees that he lacks expertise in that area:

Q. Would you defer to Mark Albrecht as to any expertise in the appropriate sampling techniques for trying to capture bacteria?

A. Well, expertise would be an overstatement.

Deposition of Scott Augustine, M.D. ("Augustine Dep.") (DX7) at 73:2–24. If Dr. Augustine doubts the scientific soundness of Albrecht's attempts to capture bacteria, *see id.*, Dr. Ho can hardly be accused of "biased advocacy" for doing the same.

Plaintiffs' bias accusations are for cross-examination at trial. They do not touch the merits of Dr. Ho's opinions, much less contradict any of his substantive points. Plaintiffs' motion to exclude his testimony on this basis should be denied.

#### **IV. DR. HO'S OPINIONS AND TESTIMONY MEET THE REQUIREMENTS OF FRYE-MACK.**

In addition to meeting the federal threshold for admissibility, Dr. Ho's opinions and testimony should also be upheld under Minnesota's *Frye-Mack* standard. *Goeb v. Tharaldson*, 615 N.W.2d 800, 814 (Minn. 2000). Minnesota law agrees with this Court that "[t]he function of rebuttal testimony is to explain, repel, counteract or disprove evidence of the adverse party." *Signature Flight Support Corp. v. Cty. of Ramsey*, No. 62-CV-14-3089, 2017 WL 1377751 (Minn. Tax Apr. 7, 2017) (quoting *Aviva Sports, Inc.*, 829

F. Supp. 2d at 834; *accord Whitney v. Buttrick*, 376 N.W.2d 274, 278 (Minn. App. 1985) (granting new trial based on district court's improper exclusion of rebuttal expert testimony). As a rebuttal expert, Dr. Ho need not have conducted studies of his own to help the jury understand and evaluate the Plaintiffs' evidence. Nonetheless, Dr. Ho's opinions meet *Goeb*'s requirements: they are "generally accepted" and "foundationally reliable" because they are drawn from peer-reviewed literature and Dr. Ho's unmatched expertise in detecting airborne bacteria.

### **CONCLUSION**

Dr. Ho's critique of Plaintiffs' experts is both relevant and reliable. As the only microbiologist designated in this MDL, he will help the jury understand and evaluate Plaintiffs' bacterial evidence—or more precisely, the *lack* of bacterial evidence—at trial. His opinions and testimony should therefore be allowed, and Plaintiffs' motion to exclude be denied, under Rules 702 and 703, *Daubert*, and *Goeb v. Tharaldson*.

Dated: October 3, 2017

Respectfully submitted,

*s/Peter J. Goss*

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